

REPORT NUMBER: 301S-MGA-03-001

SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 301S
FUEL SYSTEM INTEGRITY - SCHOOL BUSES

2003 American Transportation Corporation
IC3S530 School Bus
NHTSA No.: C30902

PREPARED BY:
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Final Report Date: May 6, 2003

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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Technical Report Documentation Page

1. Report No. 301S-MGA-03-001		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 301S School Bus Compliance Testing of 2003 American Transportation Corp IC3S530 NHTSA No.:C30902				5. Report Date May 6, 2003	
				6. Performing Organization Code MGA	
7. Author(s) Chris Novak, Project Technician Michael Janovicz, Project Manager				8. Performing Organization Report No. 301S-MGA-03-001	
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105				10. Work Unit No.	
				11. Contract or Grant No. DTNH22-02-D-01057	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance (NVS-221) 400 Seventh St., S.W. Room 6115 Washington, D.C. 20590				13. Type of Report and Period Covered Final Report 4/22/03 – 5/6/03	
				14. Sponsoring Agency Code NVS-220	
15. Supplementary Notes					
16. Abstract A compliance test was conducted on the subject 2003 American Transportation Corp IC3S530 School Bus, NHTSA No. C30902 in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-301-02 for the determination of FMVSS 301S compliance.					
17. Key Words Compliance Testing Safety Engineering FMVSS 301S				18. Distribution Statement Copies of this report are available from: NHTSA Technical Information Services (TIS) Room 5108, (NPO-230) 400 Seventh Street, S.W. Washington, D.C. 20590 (202) 366-4946	
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 42	
				22. Price	

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SECTION 1

PURPOSE OF COMPLIANCE TEST AND SUMMARY

A fuel system integrity test was performed on a MY2003 American Transportation Corp IC3S530 School Bus, NHTSA No. C30902, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-301-02 to determine compliance to the requirements of Federal Motor Vehicle Safety Standards (FMVSS) 301S, "Fuel System Integrity - School Buses".

Based on the test results, the MY2003 American Transportation Corp IC3S530 School Bus, NHTSA No. C30902 appears to meet the requirements of FMVSS 301S testing.

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-02-D-01057.

SECTION 2
COMPLIANCE TEST DATA

The following data sheets document the results of testing on the MY2003 American Transportation Corp IC3S530 School Bus, NHTSA No. C30902.

DATA SHEET 1
SCHOOL BUS DATA

Test Vehicle: **2003 American Transportation Corp IC3S530 School Bus** NHTSA No.: **C30902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **4/22/03**

GENERAL VEHICLE IDENTIFICATION

School Bus Manufacturer:	American Transportation Corporation	
School Bus Model:	2003 ATC IC3S530	
Build Date:	10/02/02	
Incomplete Vehicle Manufactured By:	International	
Build Data for Bus Chassis:	—	
School Bus GVWR (kg):	12474	
School Bus GAWR Front (kg):	4536	
School Bus GAWR Rear (kg):	7938	
School Bus VIN:	4DRBRABN73B955119	
No. of Designated Seating Positions (DSP) including Driver:	65	
School Bus NHTSA No.:	C30902	
Bus Body Color:	Yellow	
Engine Displacement	7.3L	
No. of Cylinders:	8	
Fuel Pump Actuation:	Mechanical Pump "ON" with engine	
School Bus Width (mm):	2373	
School Bus Length (mm):	10751	
Bus Unloaded Vehicle Weight (UVW) (kg):	7309	
Bus Occupant Load:	3456 kg – Passenger 68 kg – Driver 3524 kg – Total	
Target Bus Test Weight (SBTW) (kg):	10833	
Actual (SBTW) (kg):	10833	
School Bus Tire Manufacturer:	Goodyear	
	Front	Rear
Rec. Cold Tire Inflation Pressure (kpa):	758	690
Tire Size:	10R/225	10R/225
Load Range:	F	F

DATA SHEET 1 (CONTINUED)

SCHOOL BUS DATA

Test Vehicle: 2003 American Transportation Corp IC3S530 School Bus NHTSA No.: C30902
 Test Lab: MGA Research-Wisconsin Operations Test Date: 4/22/03

GENERAL VEHICLE IDENTIFICATION

SCHOOL BUS ATTITUDE

	Units	LF	RF	LR	RR
As Received:	mm	NR	NR	NR	NR
Pre-Test:	mm	1216	1220	1133	1135
Post-Test:	mm	1430	1468	1129	1129

NR = Not Recorded

Weight of Fuel:	3.19 kg/liter (7.03 lbs./gallon)
Fuel Tank Capacity (liters/kg):	284 liters/906 kg (75 gallons/527 lbs.)
Tank Test Volume (liters/kg):	258.5 liters/624.6 kg (68.3 gallons/480 lbs.)

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	1583	2032		1809	3486	
Right	kg	1542	2152		1762	3776	
Ratio	%	42.7	57.3		33.0	67.0	
Totals	kg	3125	4184	7309	3571	7262	10833

COMMENTS: NONE

Recorded By: Chris Hand

Approved By: Michael J. [Signature]

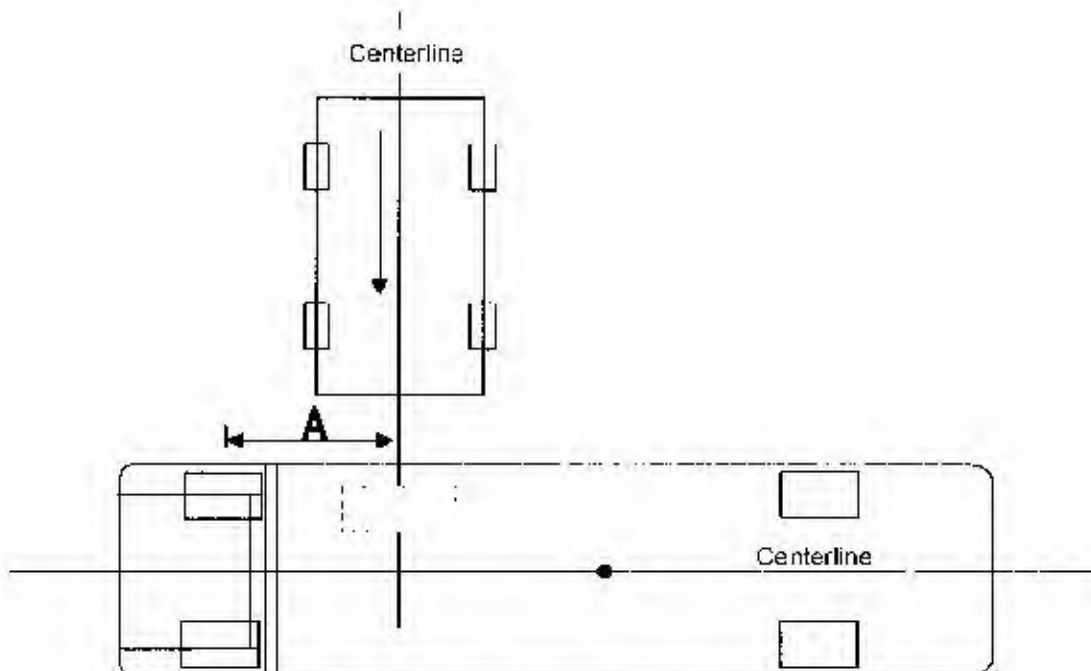
Date: 4/22/03

DATA SHEET 2
SCHOOL BUS IMPACT DATA

Test Vehicle:	2003 American Transportation Corp IC3S530 School Bus	NHTSA No.:	C30902
Test Lab:	MGA Research-Wisconsin Operations	Test Date:	4/22/03

Time of Impact:	10:32 am
Ambient Temperature (°C):	21.1
Barrier Velocity – Speed Trap 1 (kph):	47.5
Barrier Velocity – Speed Trap 2 (kph):	47.3
Barrier Penetration:	378 mm

INDICATE IMPACT POINT BELOW:



LEGEND: Red dotted line indicates location of fuel tank
 Arrow indicates point and angle of barrier impact (C_1 of arrow coincides with C_1 of monorail).
 A = Distance from Front Axle CL to Barrier CL = 1860 mm
 Impact Point Deviation: 3 mm Down, 0 mm Lateral

DATA SHEET 2 (CONTINUED)
SCHOOL BUS IMPACT DATA

Fuel Spillage Noted:	No
Failure, if applicable:	None

Stoddard Solvent Spillage Measurements

Timeframe	Description	Allowable Spillage	Measured Spilled	Results
$T_0 - T_1$	Time Zero to Cessation of Motion	31 grams (1 ounce)	0	PASS
$T_1 - T_2$	Cessation of Motion to 5 minutes after Cessation of Motion	156 grams (5 ounces)	0	PASS
$T_2 - T_3$	5 Minutes after Cessation of Motion to 30 minutes after Cessation of Motion	31 grams (1 ounce) per minute 933 grams (30 ounces) Total Allowed	0	PASS

ADDITIONAL FAILURE DETAILS: None

Recorded By: _____

Chris Howard

Approved By: _____

Michael J. [Signature]

Date: 4/22/03

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: **2003 American Transportation Corp IC3S530 School Bus** NHTSA No.: **C30902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **4/22/03**

Equipment	Description	Serial No.	Cal. Date	Next Cal. Date
Counter/Timer	DCI	939095	10/25/02	10/25/03
Counter/Timer	DCI	939094	10/25/02	10/25/03
Stop Watch	Cole Parmer	9441010	3/28/03	3/28/04
Vehicle Scales	GSE	212091 & 212092	12/26/02	6/26/03
Tire Pressure Gauge	Dill	MGA05133	10/16/02	10/16/03
Tape Measure	Stanley Powerlock 5M	146	4/8/03	10/9/03
Temp. Indicator	Fluke Probe with Multimeter	944939	10/16/02	10/16/03
Fluke Meter	Fluke	76270715	10/8/02	10/6/03

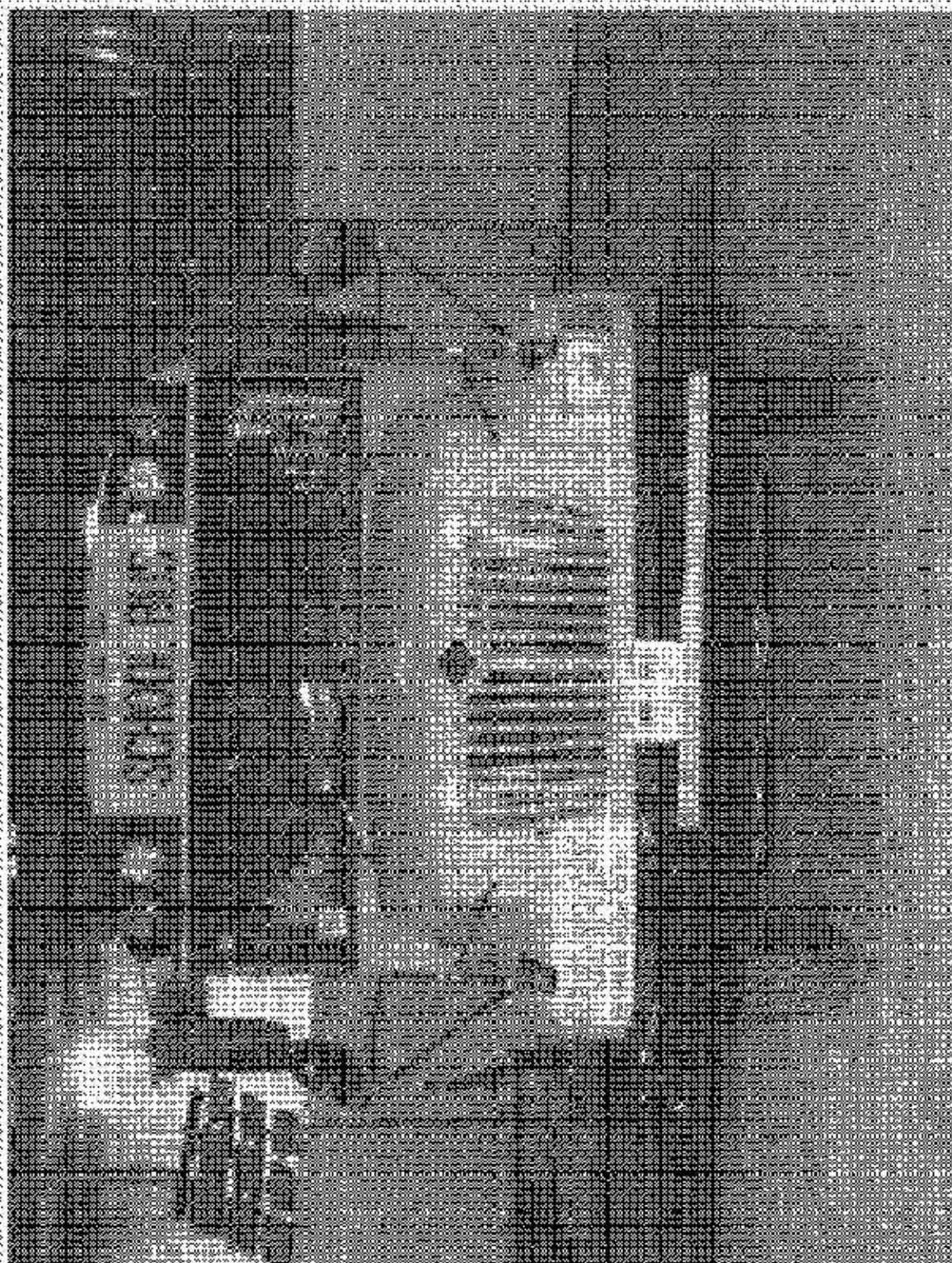
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Taxation 2003 American Transportation Corporation
FHVSS 301 Side Impact Test

TESTING: APR 12, 2003

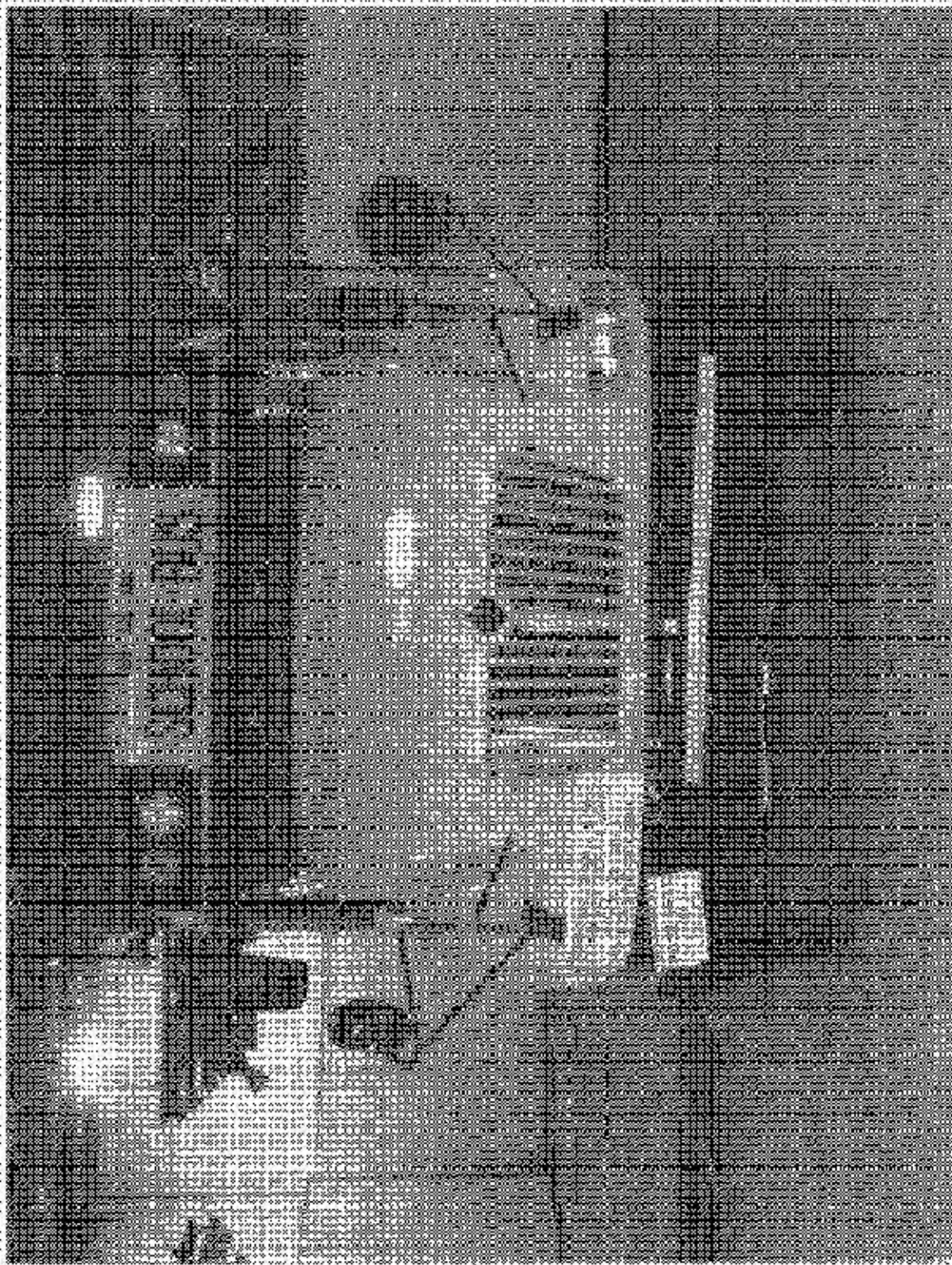


2003 American Transportation Corporation

Test Vehicle 2003 American Transportation Corporation

Rockwell

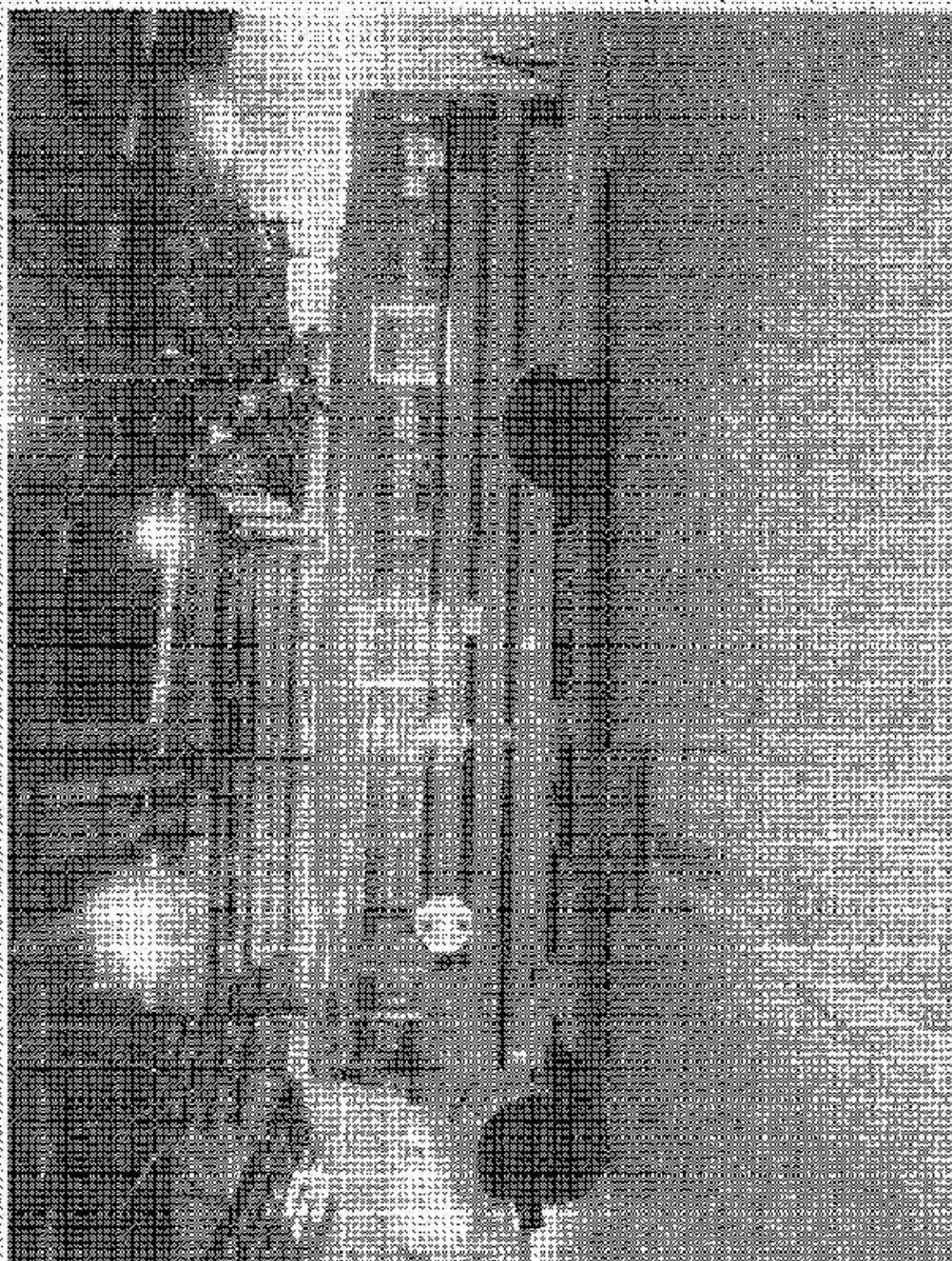
Test Date April 22, 2003



Front View of School Bus

Tow Vehicle: 2003 American Transportation Corporation
Procedure: FMYSS 301 Side Impact Test

Test Date: April 22, 2003



Printed at School Bus

Post Vehicle 2003 American Transportation Corporation
Photograph FMVSS 201 Side Impact Test

Test Date: April 22, 2003

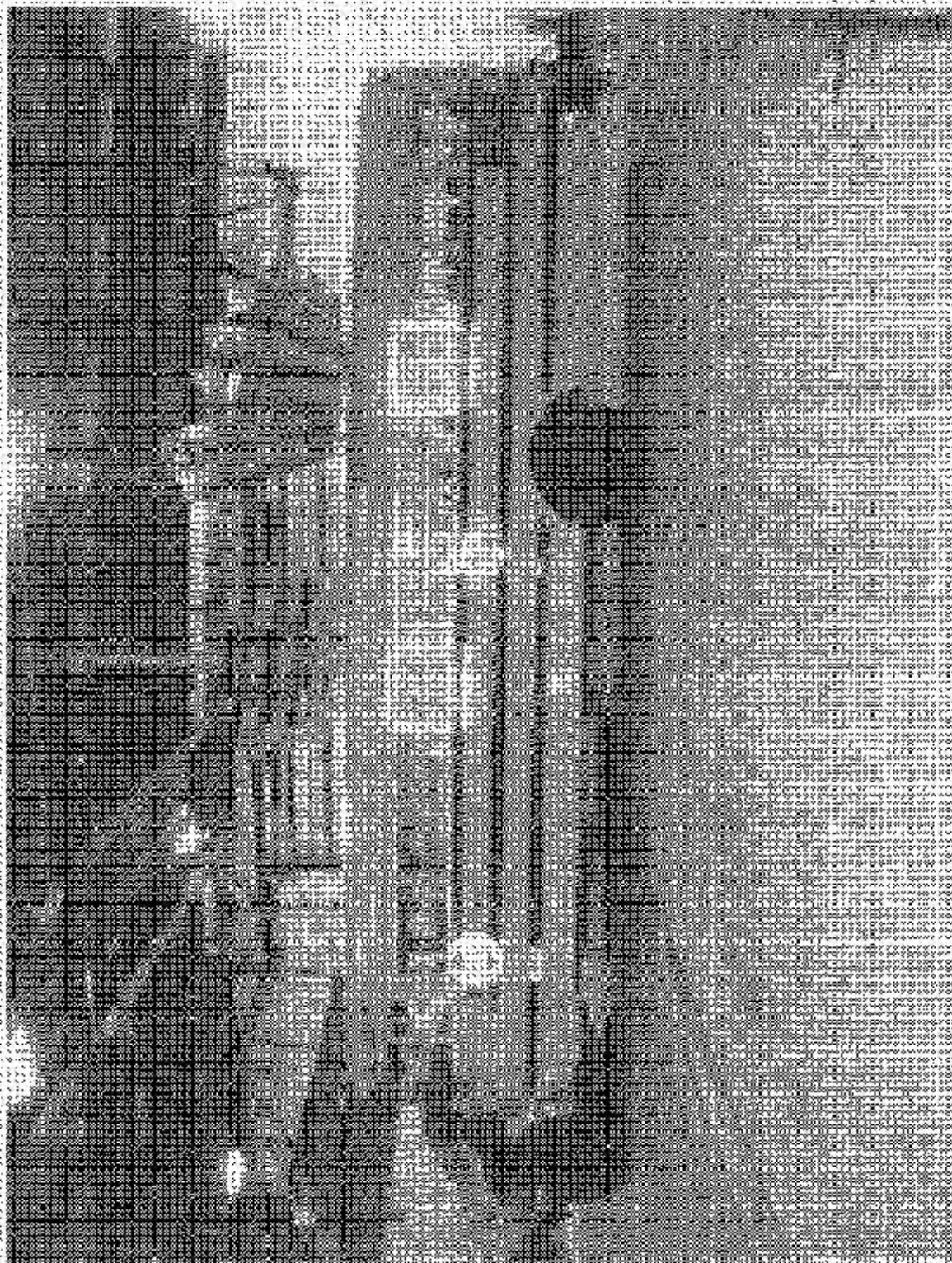
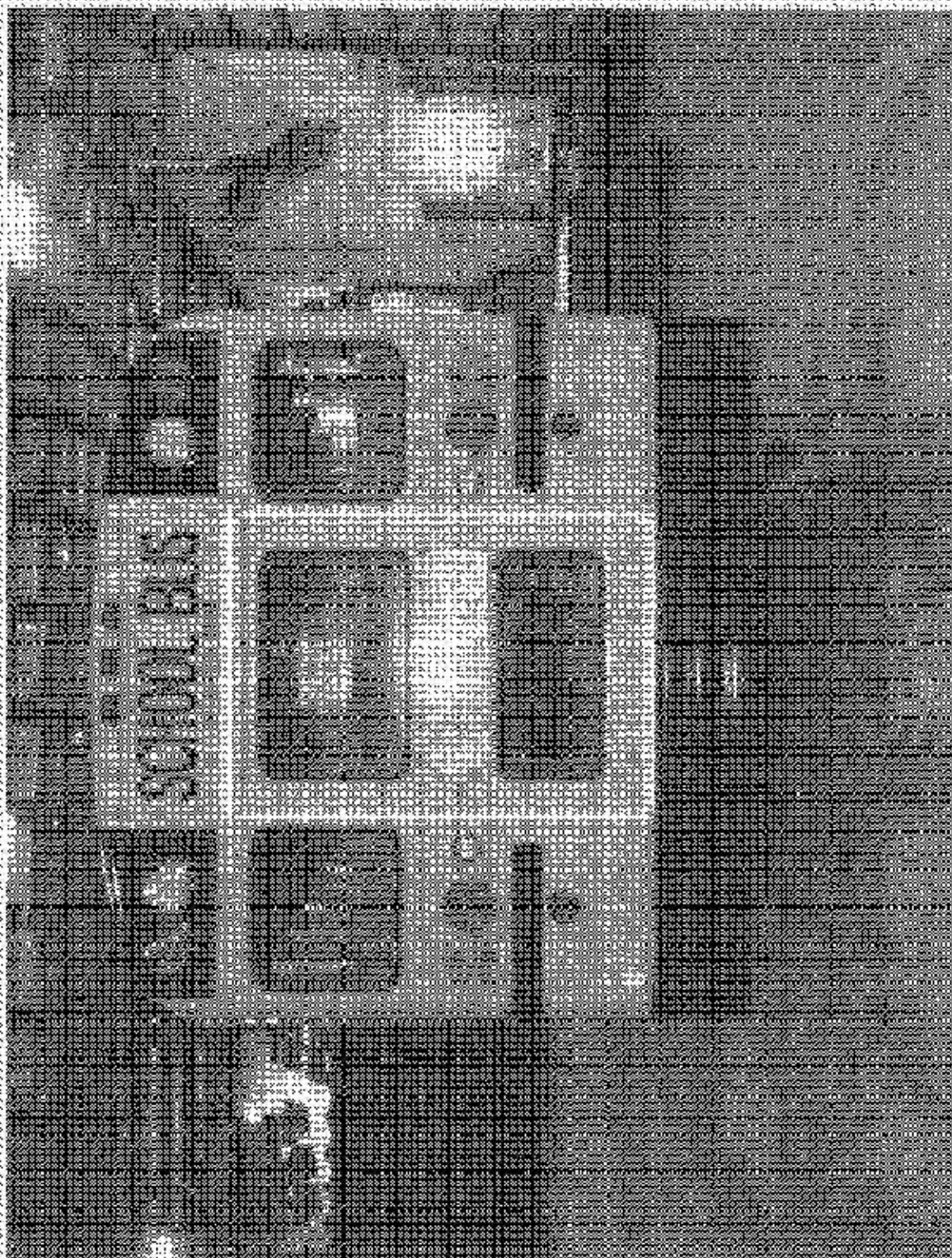


Photo Date: April 22, 2003

Trac Vehicle: 2003 American Transportation Corporation
Model: F40VLS 301 Side Impact Test

Test Date: April 23, 2003

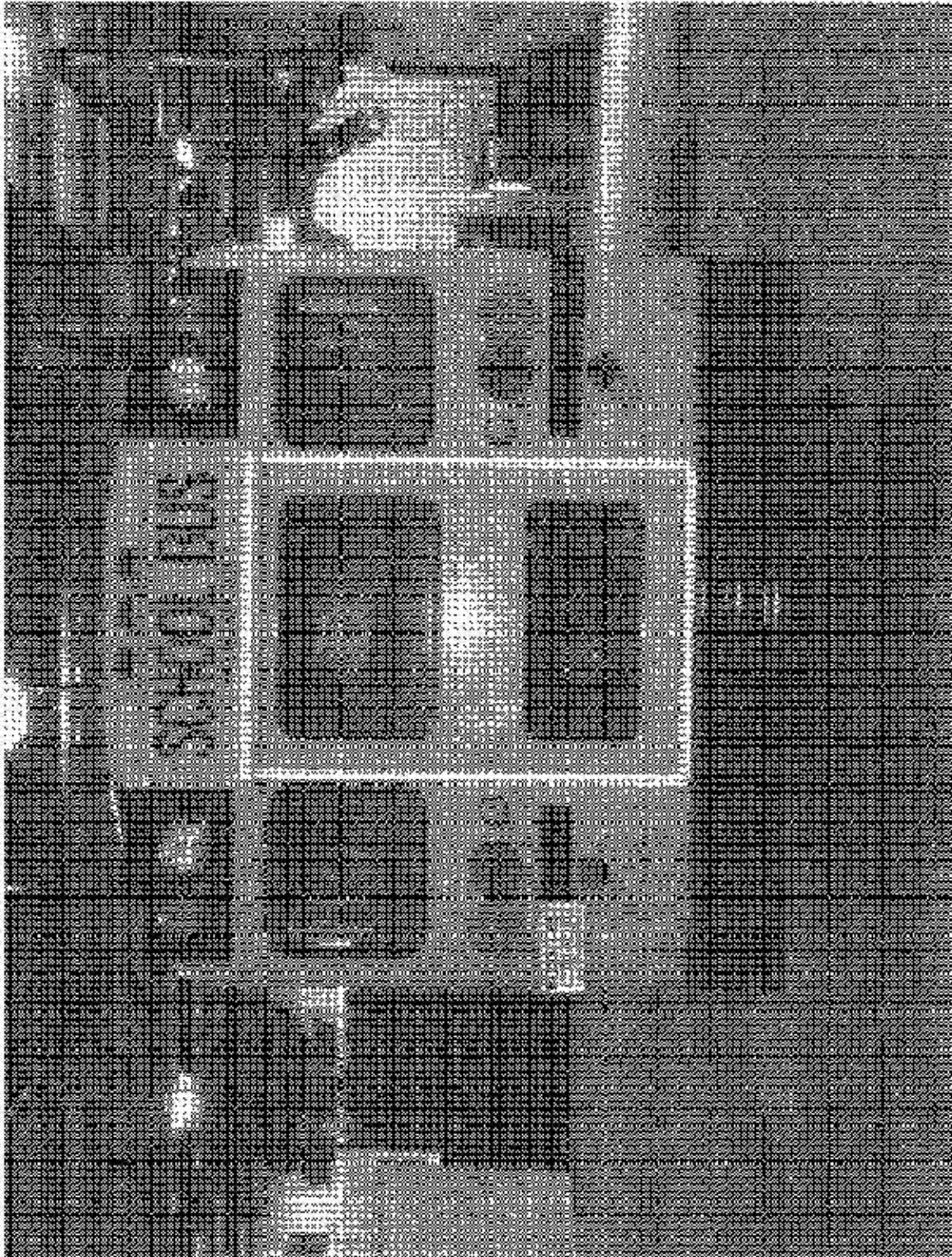


Side View of 2003 American Bus

Test Vehicle: 2003 American Transportation Corporation

Location: FMVSS 301 Side Impact Test

Test Date: April 22, 2003



Front Left View of Collision Site

Test Vehicle: 2003 American Transportation Corporation
Portable: FMVSS 201 Side Impact Test

Test Date: April 22, 2003

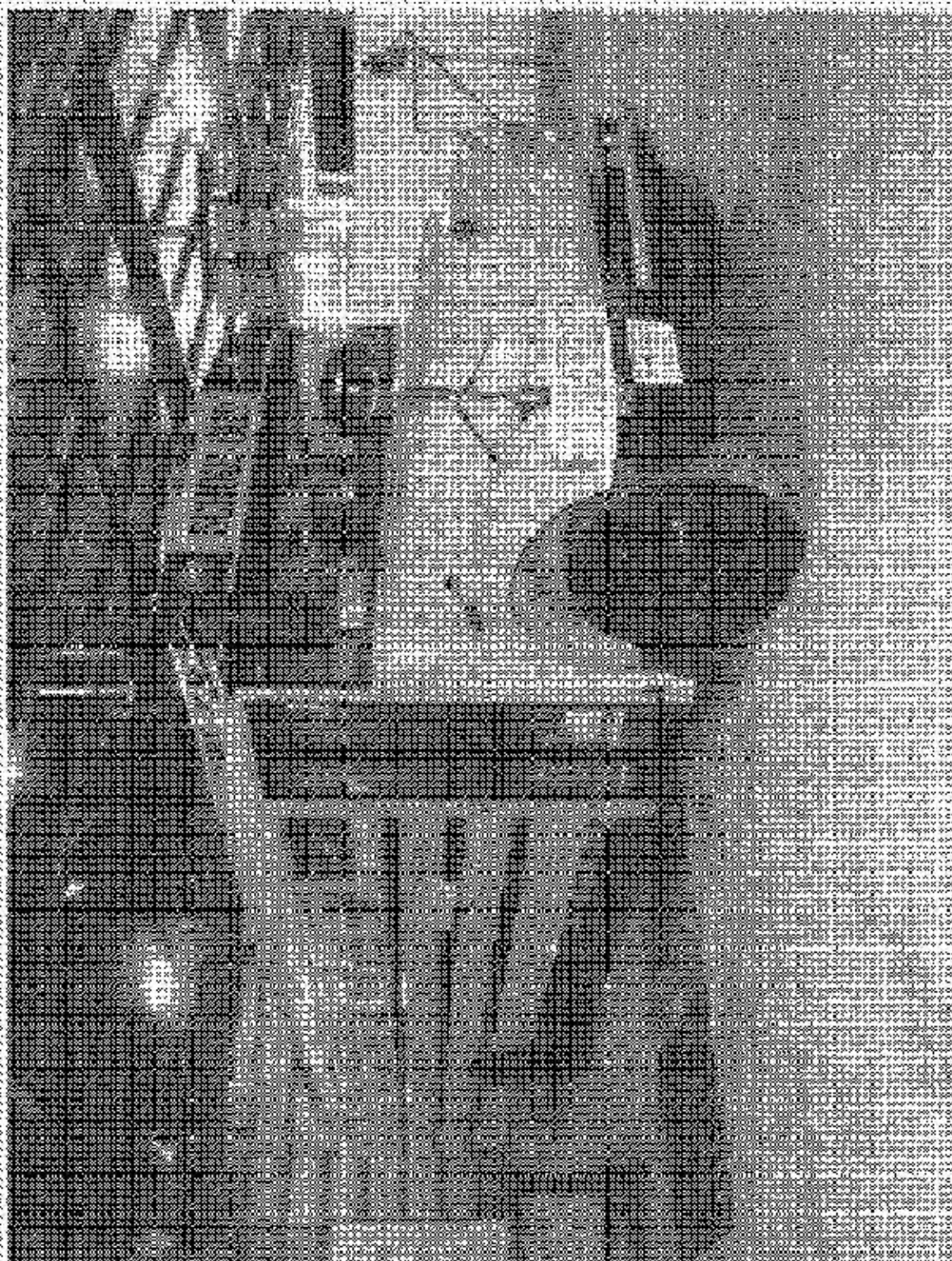
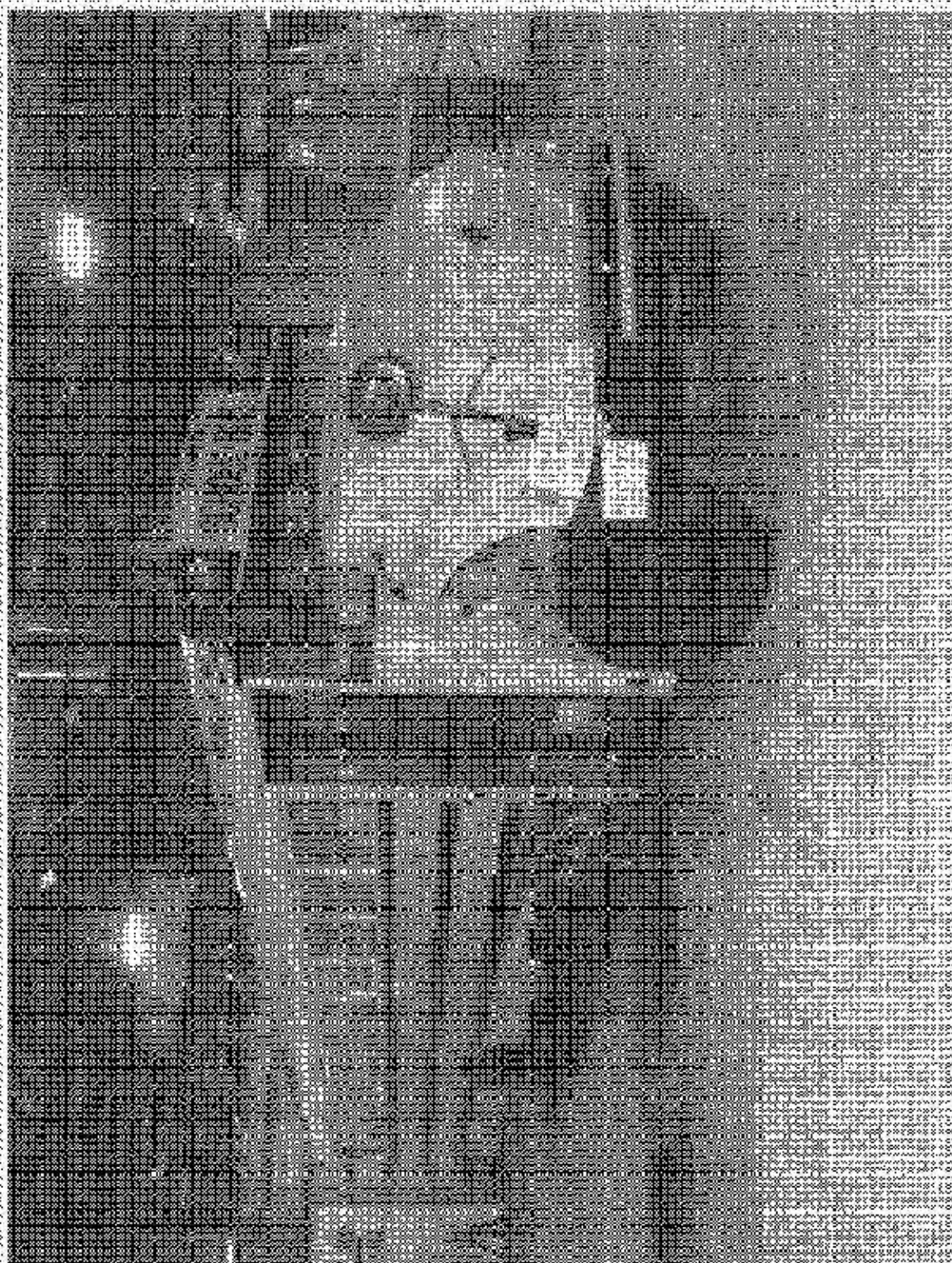


Photo taken from 25' view of 2003 FMVSS 201

The Valley 2003 American Transportation Corporation
Procedures FMS 301 Side Impact Test

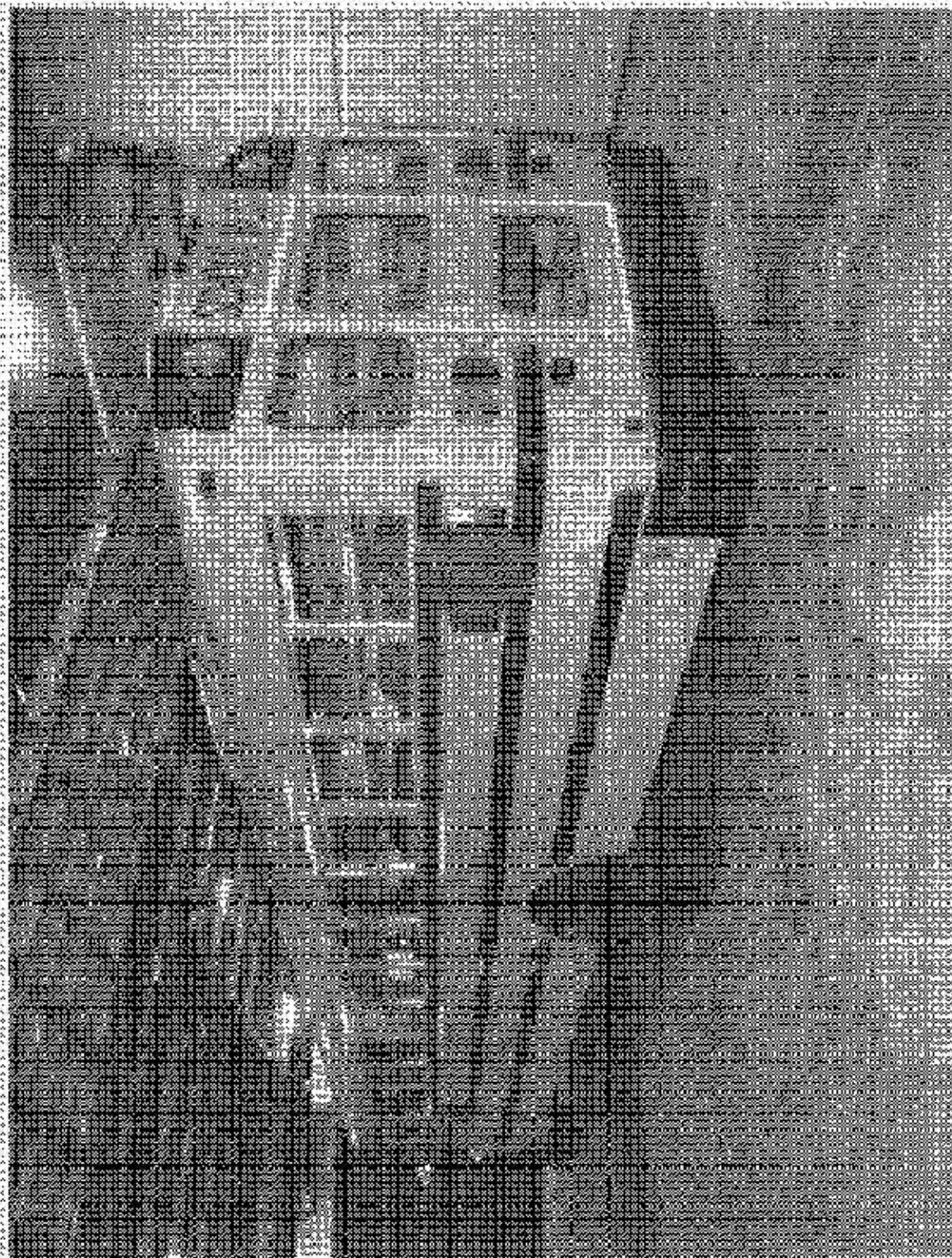
Test Date: April 22, 2003



CRASH ROOM FROM A VIEW OF SUBJECT

Test Report 2003 American Transportation Corporation
FAYSS 301 Side Impact Test

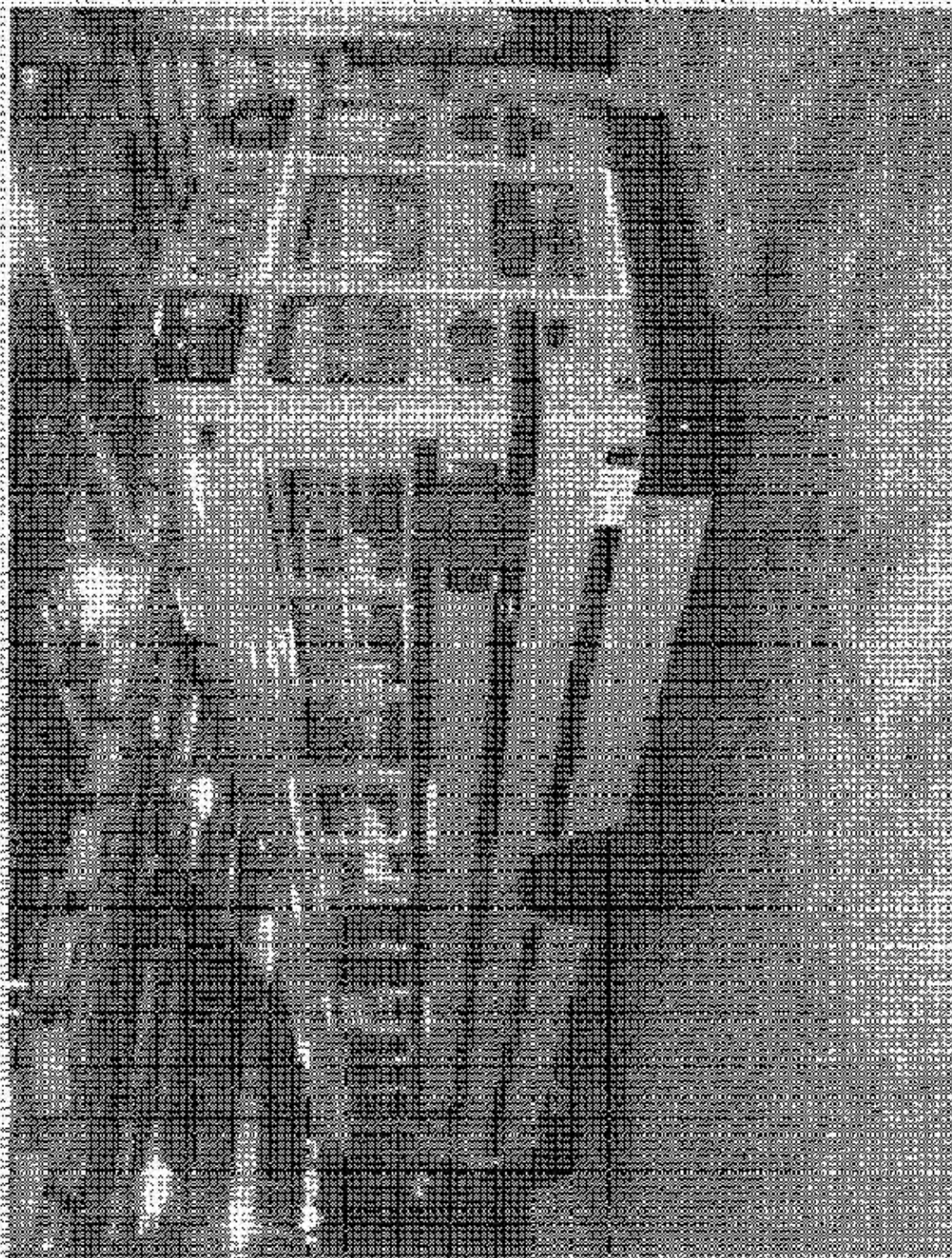
Test Date April 23, 2003



Pre-Test Left Rear View of School Bus

Test Vehicle: 2003 American Transportation Corporation
Procedure: FMVSS 301 Side Impact Test

Test Date: April 23, 2003



Post-Impact View of School Bus

2003 American Transportation Corporation

FMVSS 301 Side Impact Test

Leg: Date. April 22, 2003

THE
OF THE
IN THE

Vehicle Certification and Tire Information Label

Task No: 2003 American Transportation Corporation
Procedure: FNVSS 301 Side Impact Test

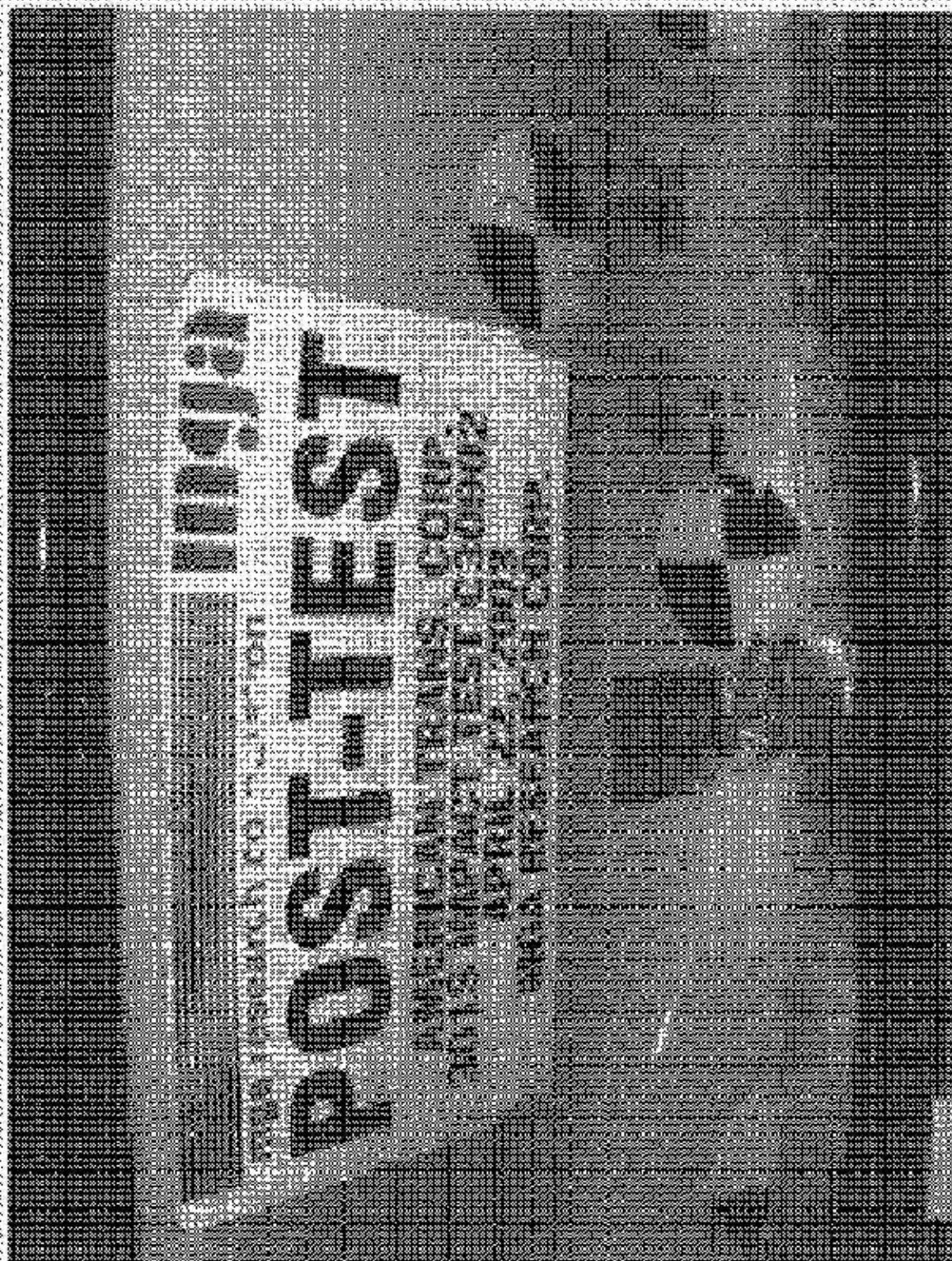
Test Date: April 22, 2003



Pre-Test Impact Target

Test Vehicle: 2003 American Transamerica Corporation
Procedure: FMVSS 201 Side Impact Test

Test Date: April 22, 2003



Initial

TEST VEHICLE TO "C" SECTION

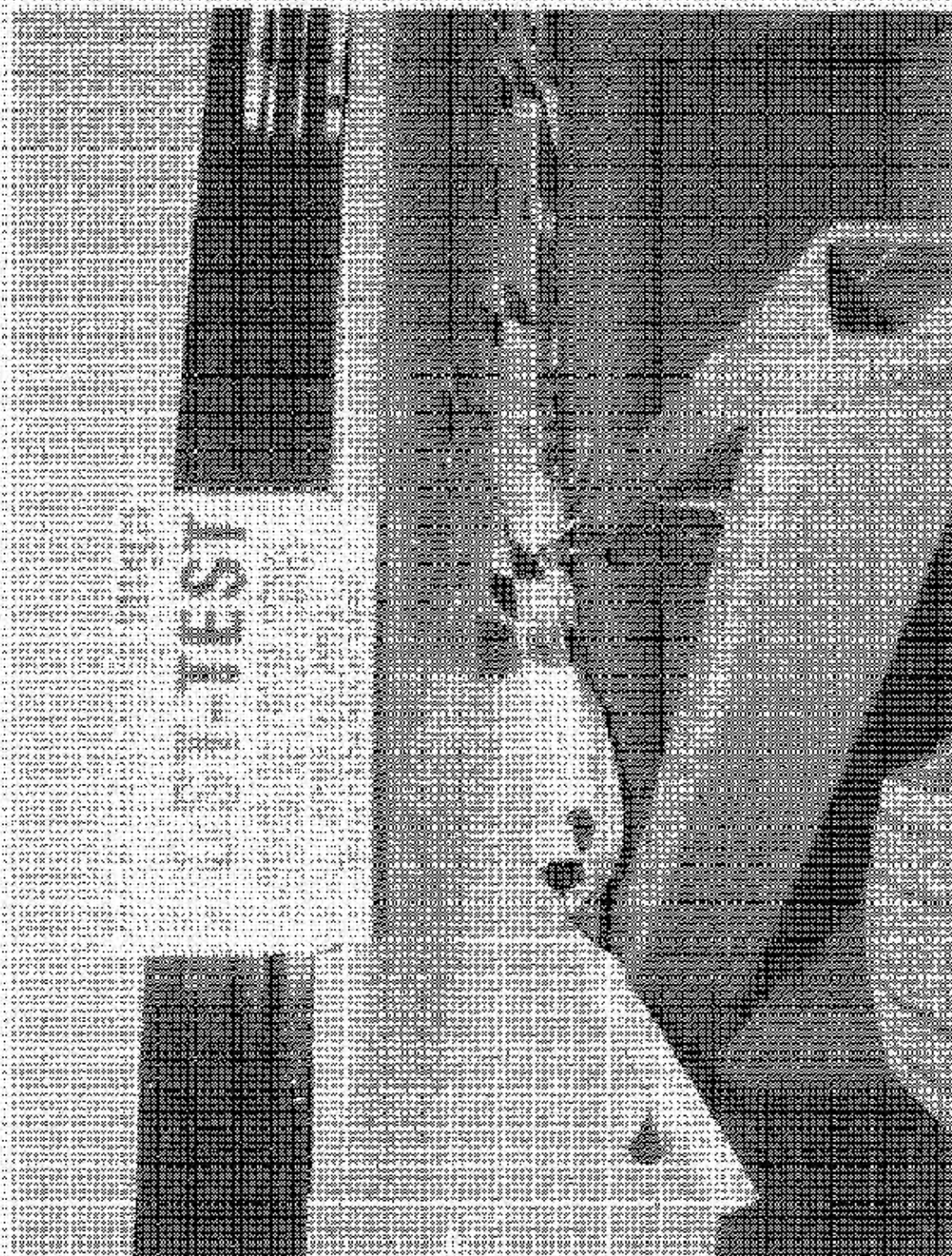
POST-TEST

AMERICAN TRANS. CORP.
THIS IMPACT TEST CROOK?
UPPER 22.2003
BAND H-6547504 CORP.

Post-Test of 2003 Transamerica

Test Vehicle: 2005 American Transcendental Corporation
Modules: FMVSS 601 Side Impact Test

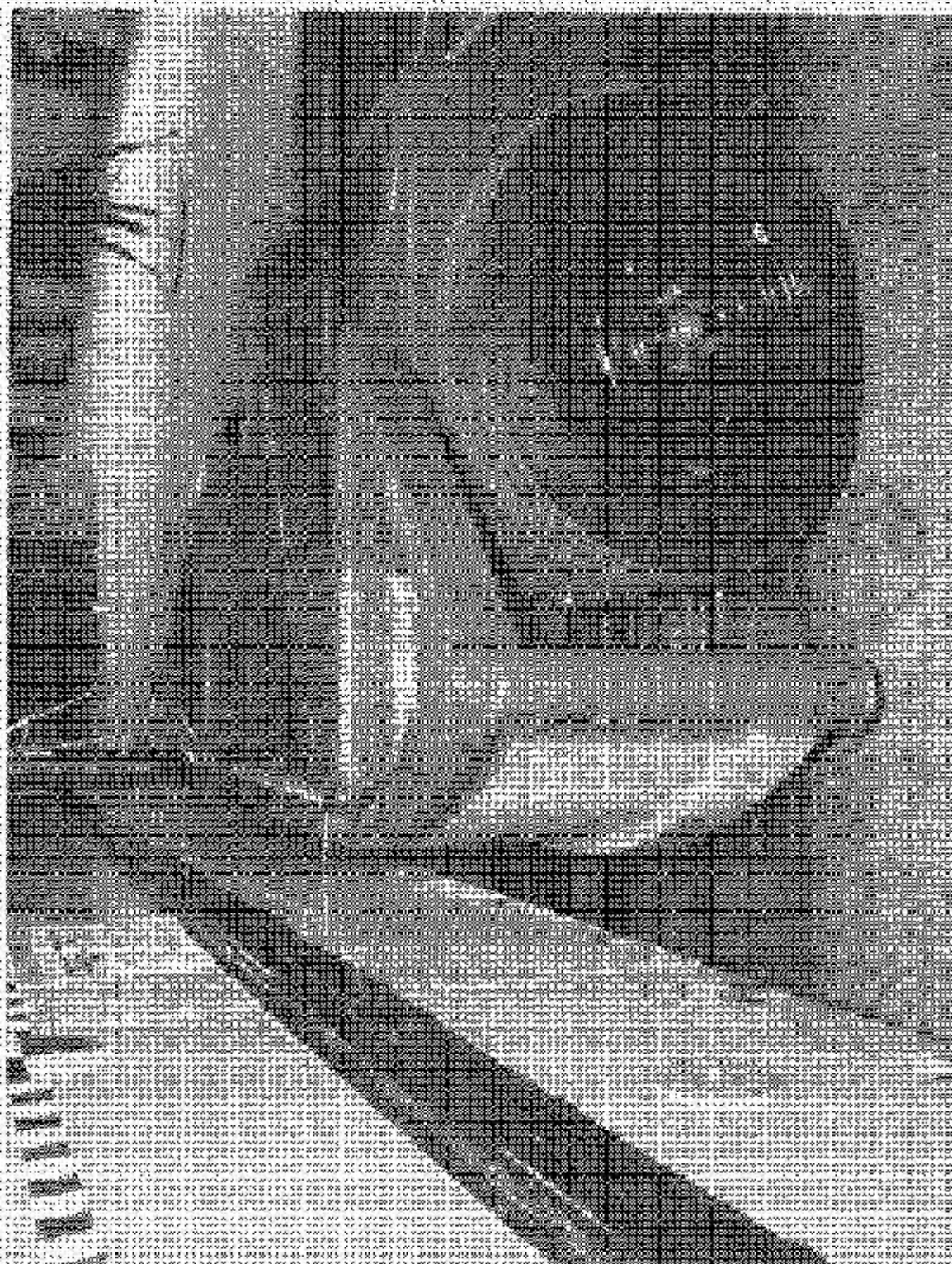
Test Date: April 22, 2003



Position of Impact Location #2

Test Vehicle: 2003 American Transportation Corporation
Procedure: FMVSS 301 Side Impact Test

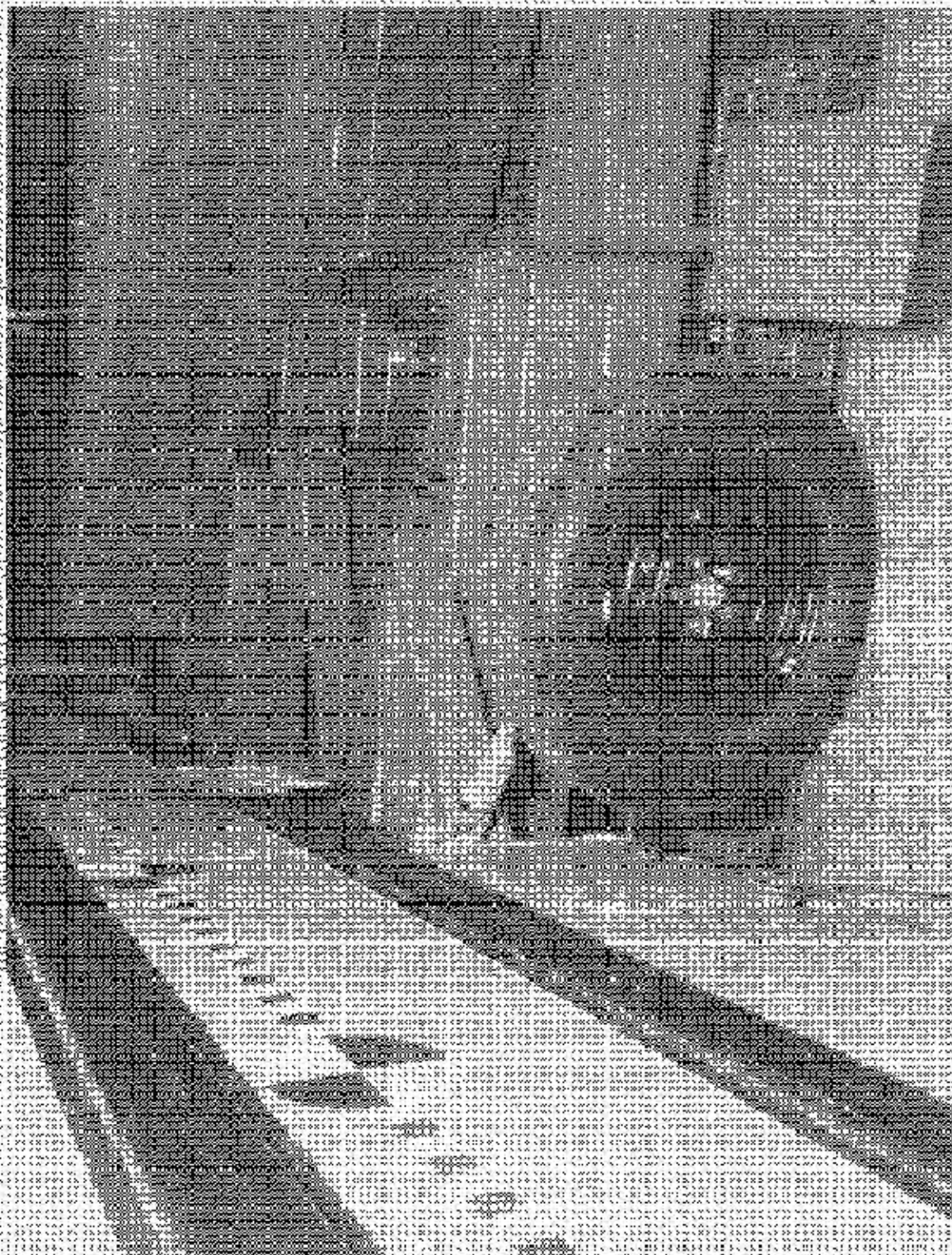
Test Date: April 23, 2003



Pre-Test of Barred (Redacted)

Test Vehicle: 2000 American Transportation Corporation
Procedure: FMVSS 201 Side Impact Test

Test Date: April 28, 2003



Door Lock Assembly and Other Components

For Vehicle 2003 American Transportation Corporation
FNUSS 201 Side Impact Test

Version April 23, 2003

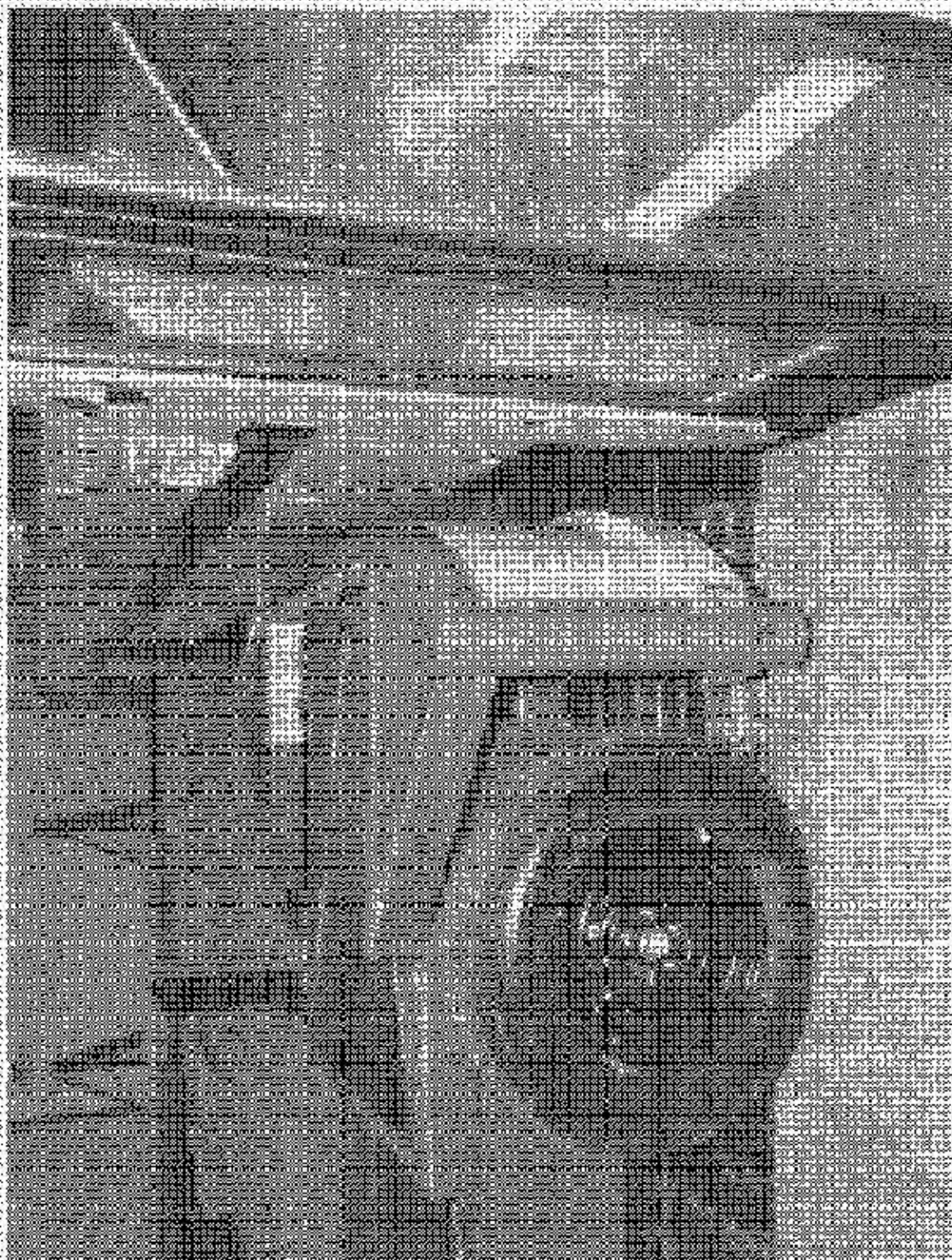


Photo of Vehicle 2003

Test Version: 2003 American Transportation Corporation
Photo: 001 Side Model Test

Test Date: April 22, 2003

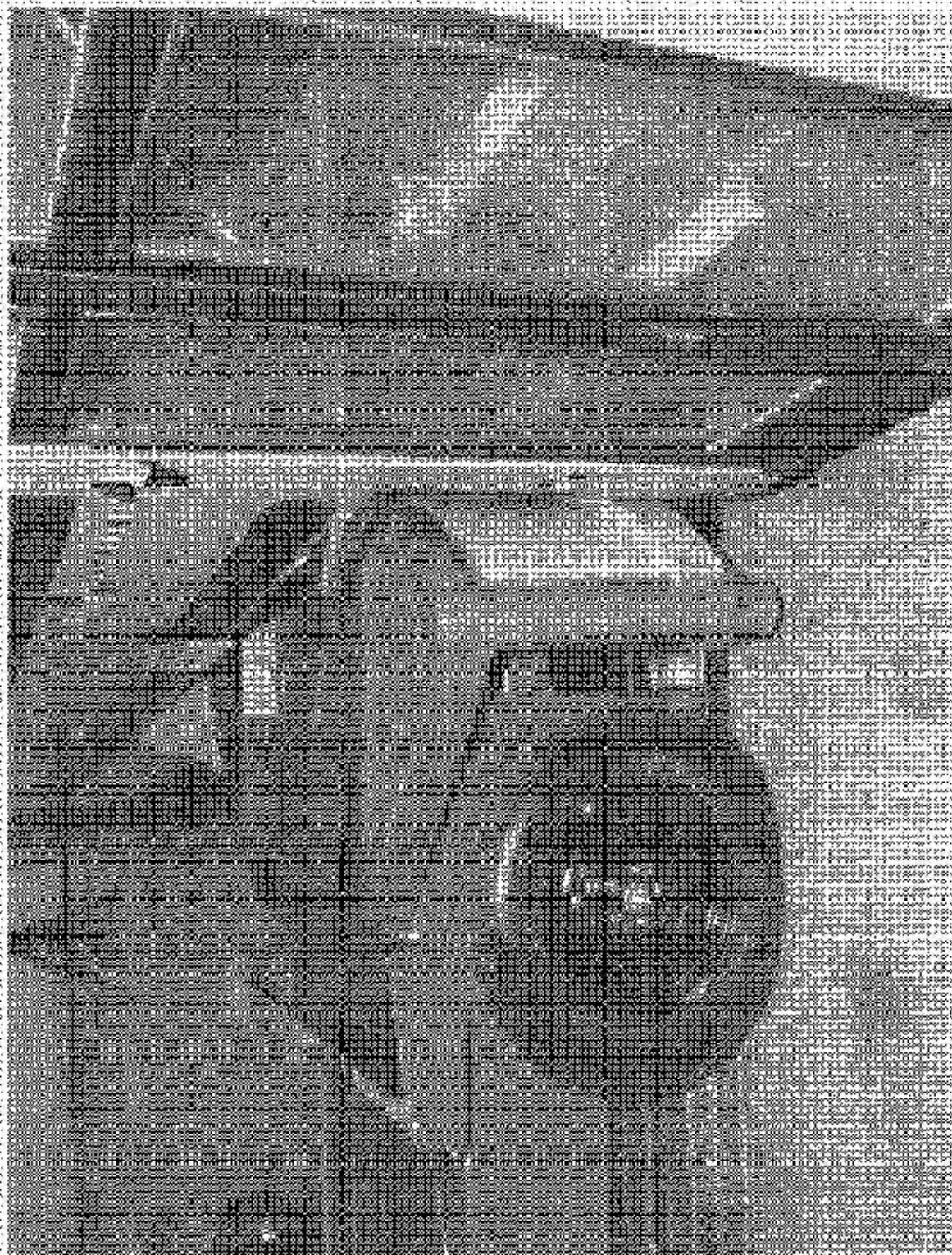


Photo: Test of 2003 American Corporation

For Valuing 2003 American Transportation Corporation
Provisional FVSS 501 Side Impact Test

Test Date: April 22, 2003

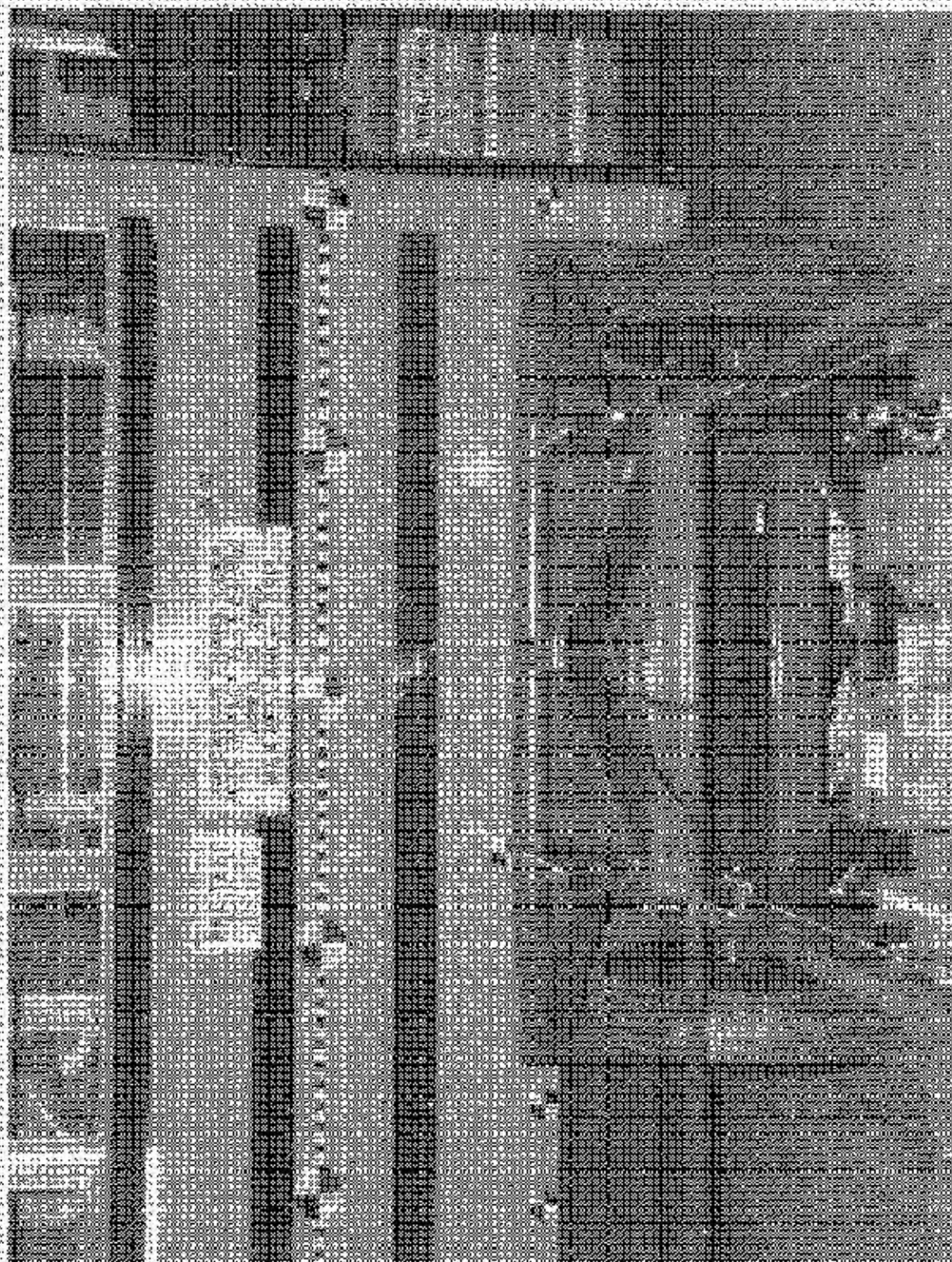
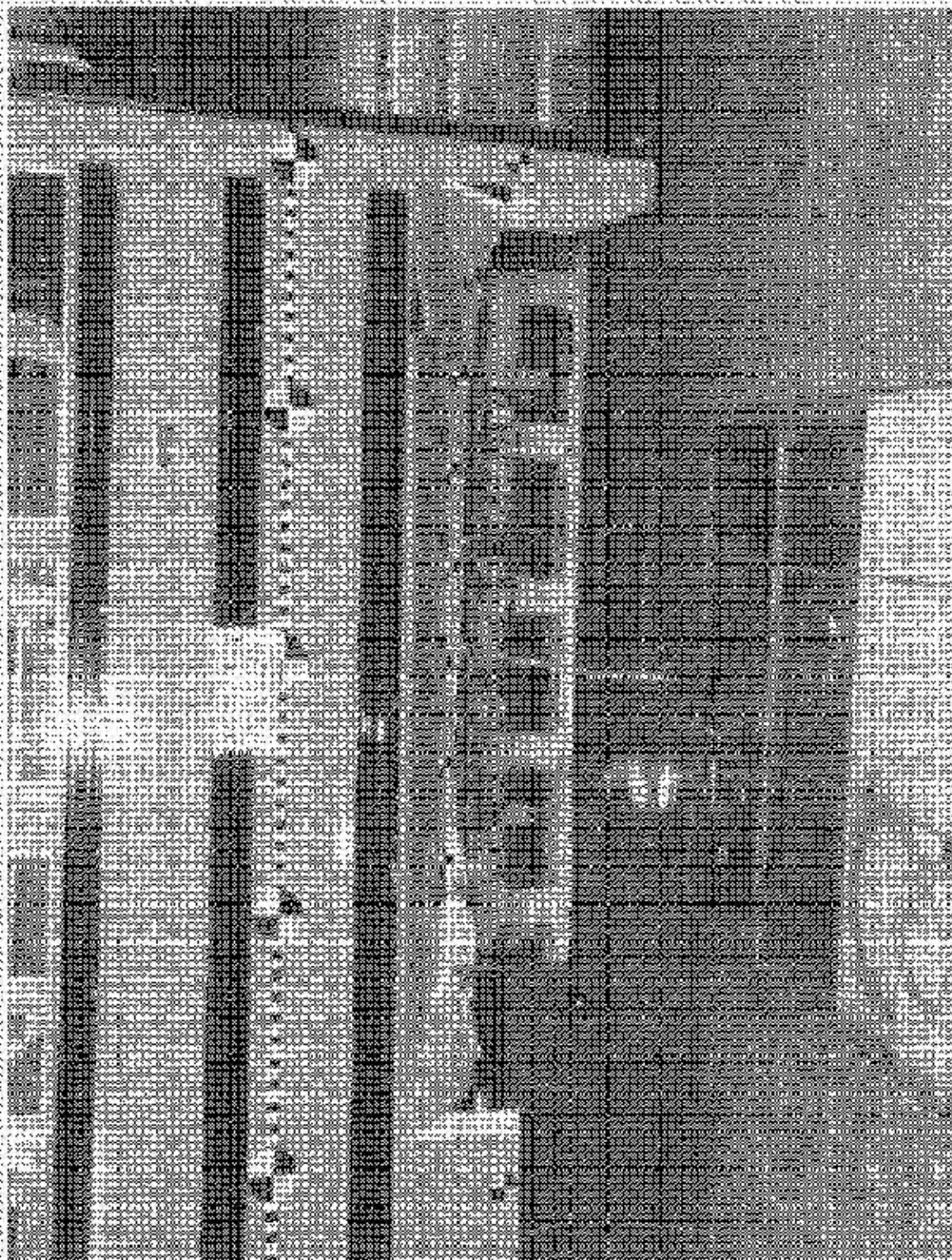


Photo of Vehicle

Page Version: 2003 American Transportation Corporation
Procedure: 75MVS5 301 Side Impact Test

Test Date: April 22, 2003



75MVS5 301 Side Impact Test



Test Vehicle: 2015 American Transportation Corporation
Procedure: FMVSS 301 Side Impact Test

Test Date: April 22, 2015



Post-Test of Fuel Cell and Impact Caps

Test Vehicle: 2002 American Transportation Corporation
Procedure: FMVSS 301 Side Impact Test

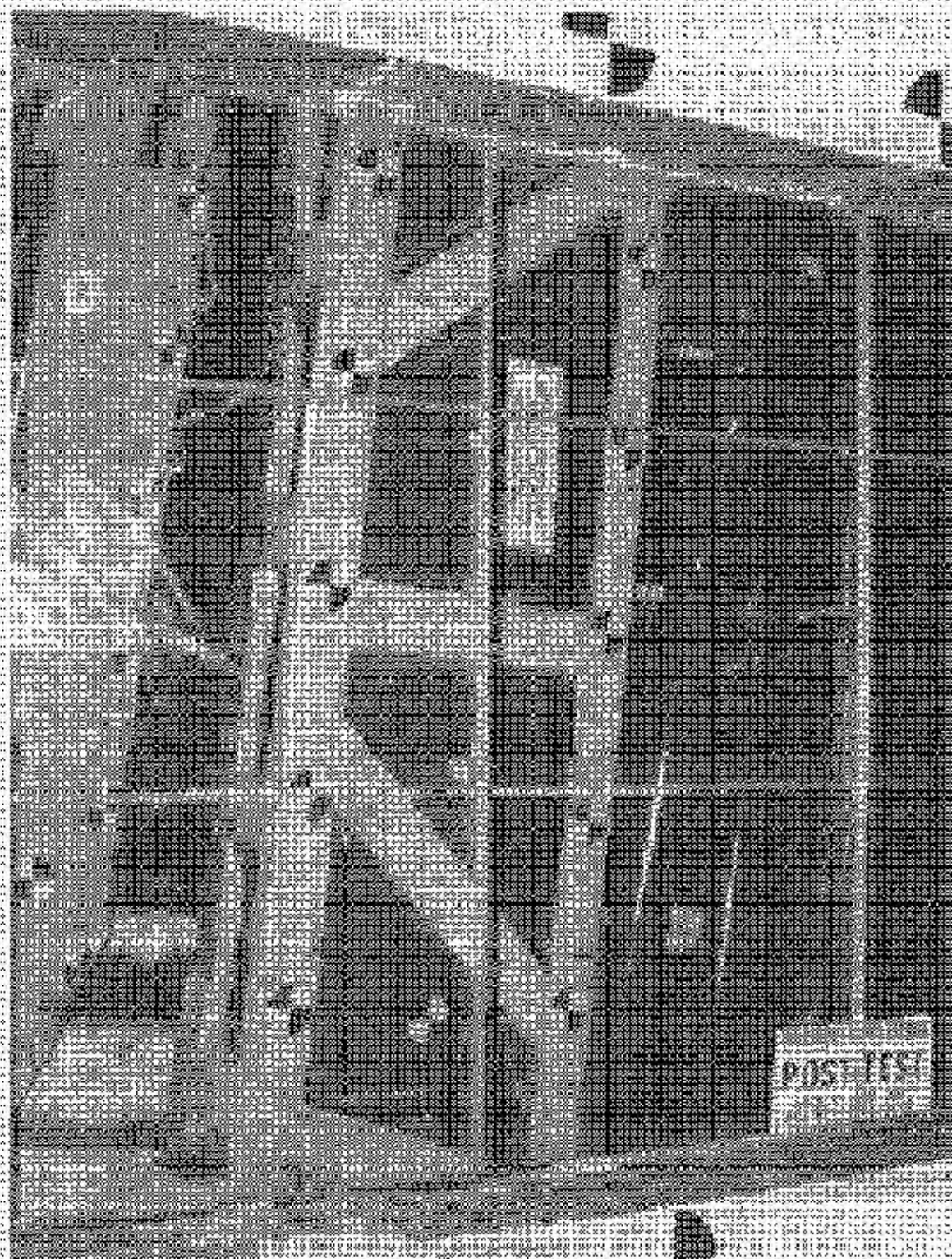
Test Date: April 22, 2003



View of the Rear Left Side (View 4)

Test Vehicle: 2003 American Transportation Corporation
Procedure: FMVSS 201 Side Impact Test

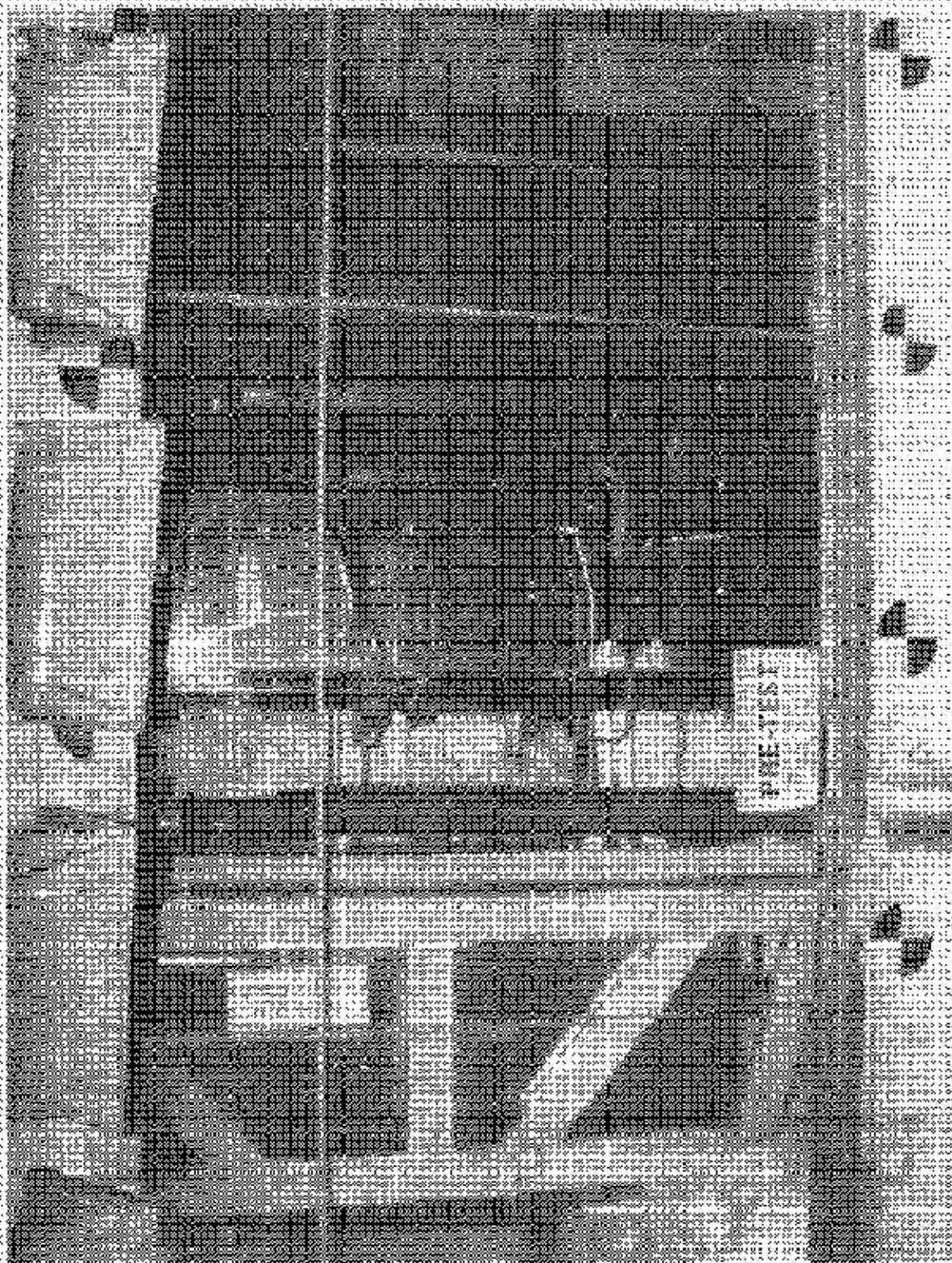
Test Date: April 22, 2003



Test Date: April 22, 2003

Page Valuation: 2003 American Transportation Corporation
Production: FMVSS 201 Side Impact Test

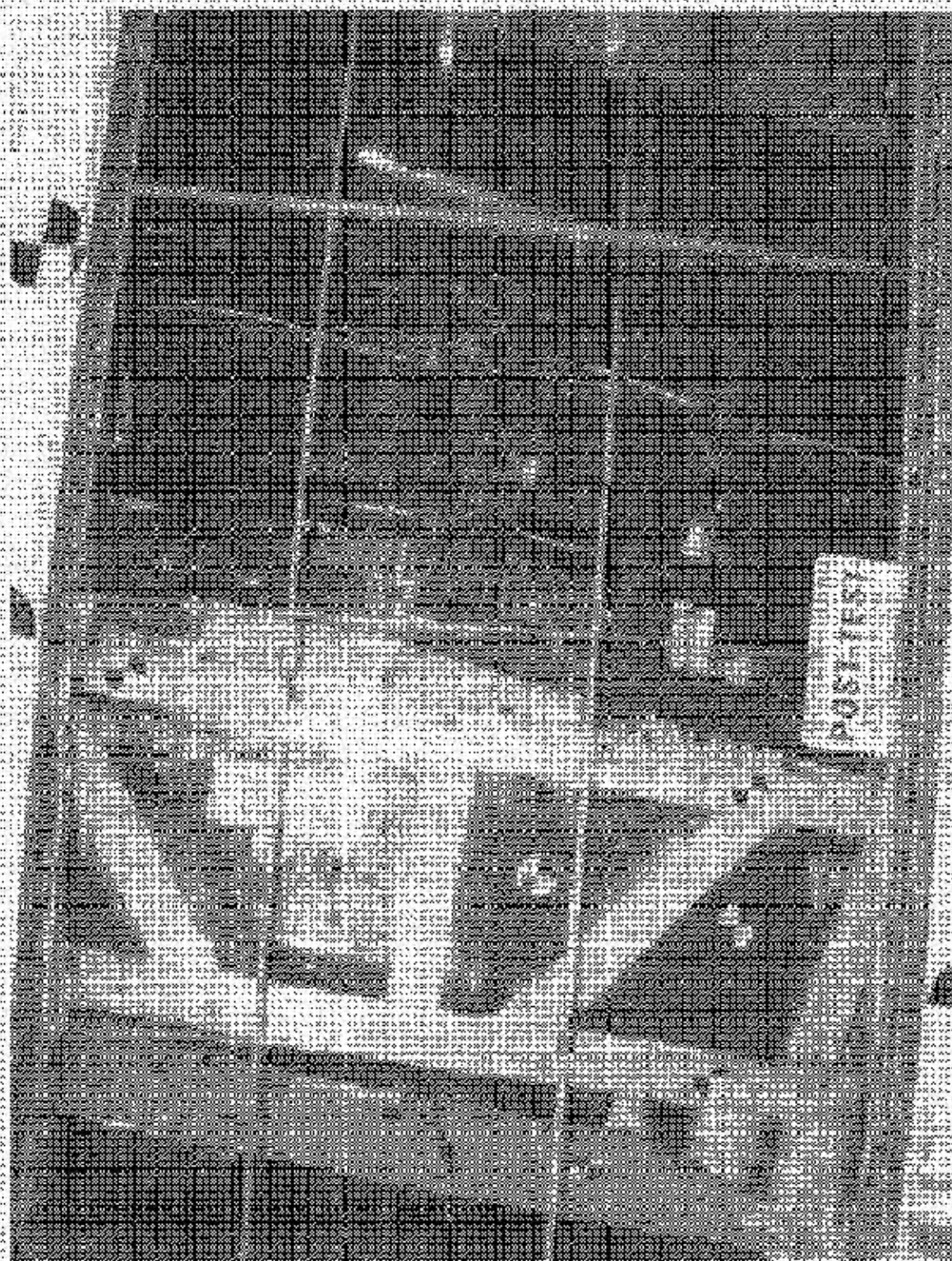
Test Date: April 23, 2003



Copyright © 2003 American Transportation Corporation

Test Value: 2003 American Transportation Corporation
Procedure: FMVSS 201 Side Impact Test

Test Date: April 22, 2003



Post Test of Fuel Tank Usage (June 2003)

Fig. 10-10: 2003 American Transportation Corporation
Providence, RI
FV55-501 Side Impact Test

Test Date: April 23, 2003

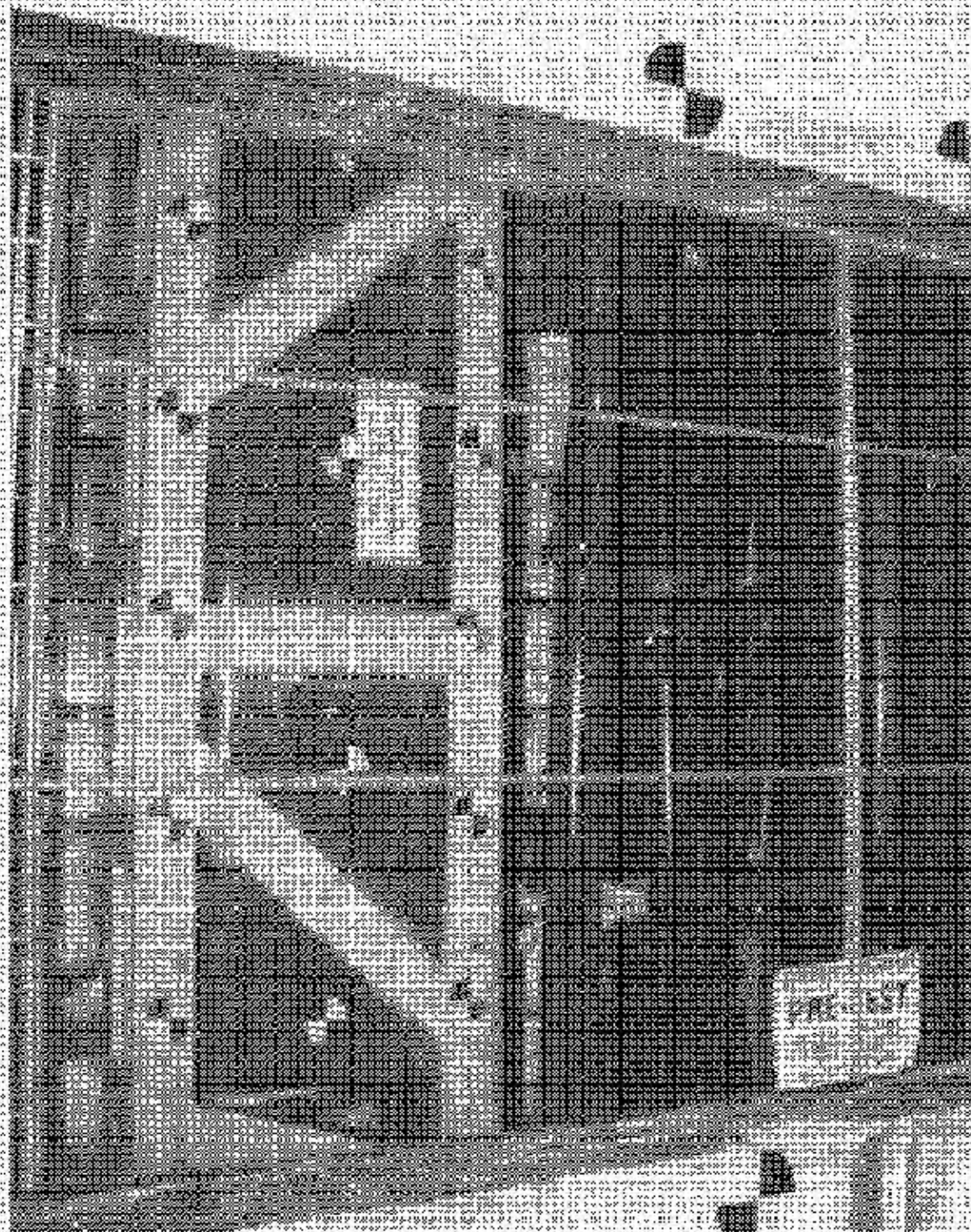
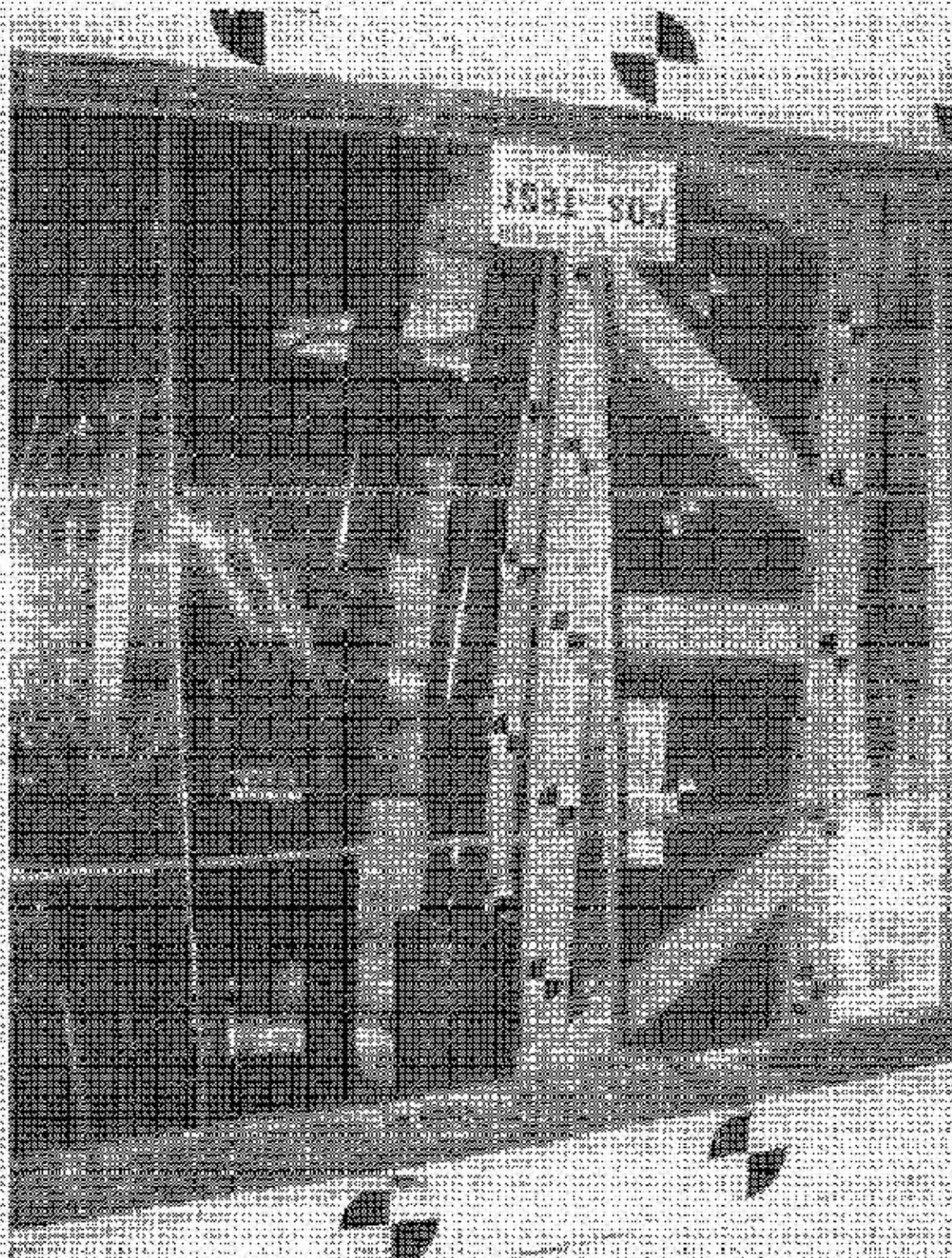


Photo Test of FV55-501 Side Impact Test

Test Vehicle: 2003 American Transportation Corporation
Registration: F10055 301 504 * Inmate Year

Test Date: April 22, 2003



Test of the Park County

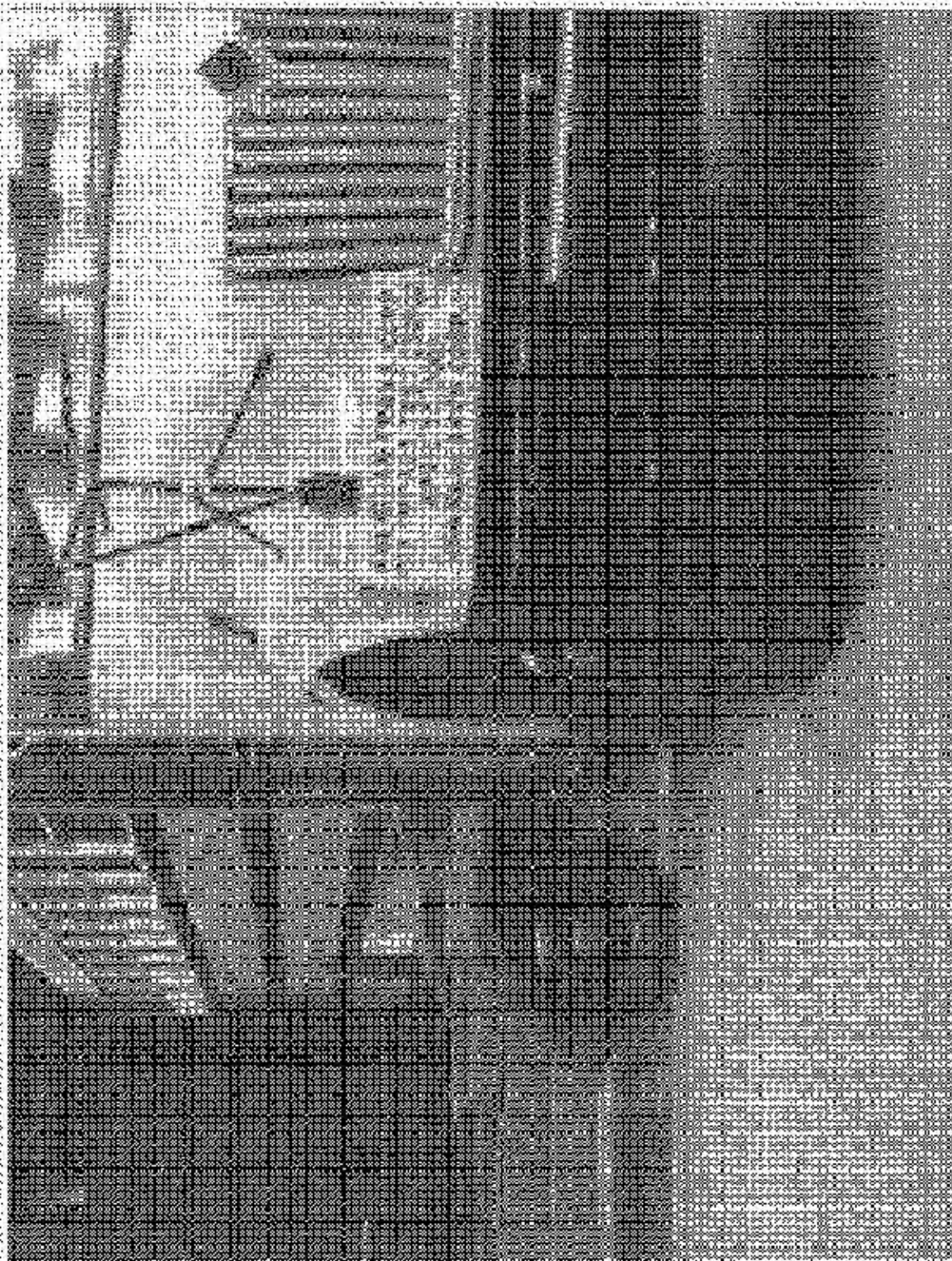
Test Values: 2003 American Transportation Corporation
Procedures: FMVSS 501 Side Impact Test
Test Date: April 22, 2013



Space The Course Display

Test Vehicle: 2002 American Transportation Corporation
Procedure: FMVSS 201 Side Impact Test

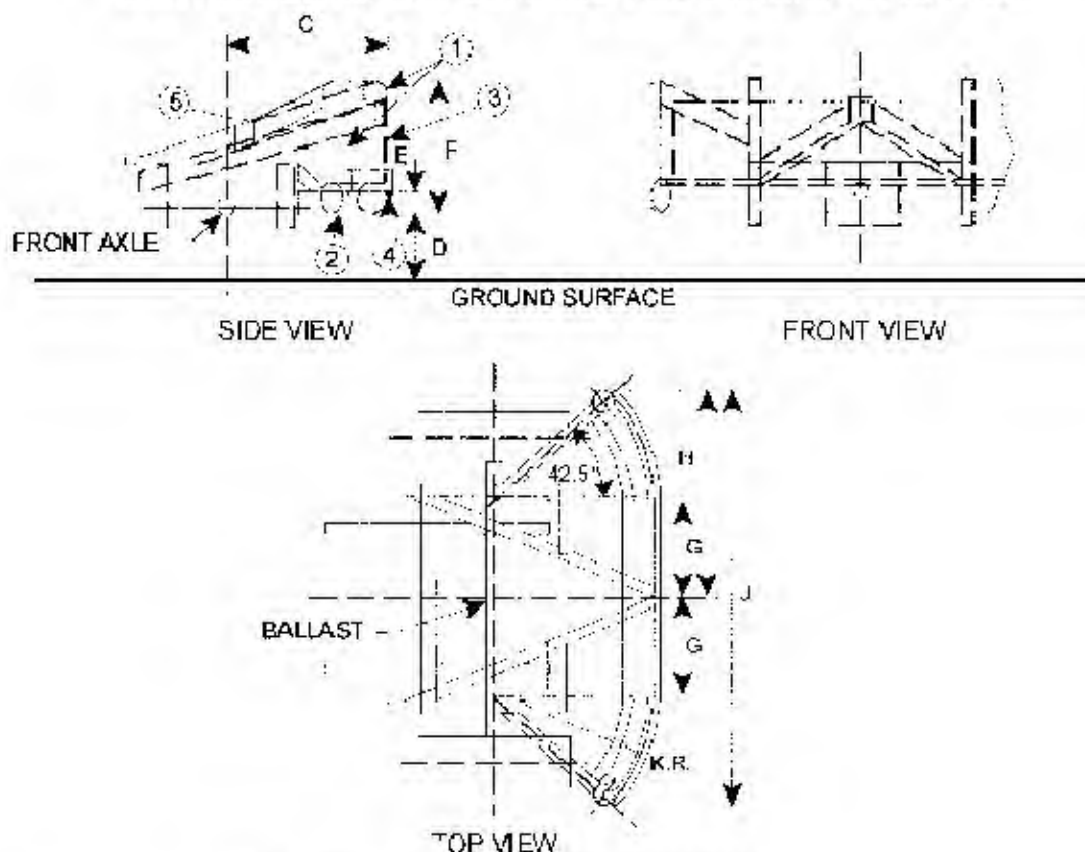
Test Date: April 23, 2003



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SECTION 6
BARRIER INFORMATION

CONTOURED IMPACT SURFACE FOR COMMON CARRIAGE



DIMENSIONS SHOWN IN TABLE ON NEXT PAGE

NOTES:

1. Upper Frame 4.0 in. dia x 0.25 in. wall (102 mm dia x 6 mm wall)
Steel Tubing (3 Sides)
2. Lower Frame 6.0 in. dia x 0.50 in. wall (152 mm dia x 13 mm wall)
Steel Tubing
3. Face Plate 0.75 in. (19 mm) thick cold rolled steel
4. Leading Edge 1.0 s 4.0 in. (25 x 102 mm) steel band, sharp
edges broken
5. A1 Inner Reinforcements 4.0 x 2.0 x 0.19 in. (102 x 51 x 5 mm)
steel tubing

Total Weight = 4,000 ± 50 lbs (1,814.1 ± 22.7 kg)

Weight at each Rear Wheel =

900 ± 25 lbs (408.2 ± 11.3 kg)

Weight at each Front Wheel =

1,100 ± 25 lbs (499.0 ± 11.3 kg)

Moments of Inertia:

$I_x = 271 \pm 13.6 \text{ slug-ft}^2 (367 \pm 18.4 \text{ kg-m}^2)$

$I_z = 3,475 \pm 174 \text{ slug-ft}^2 (4,711 \pm 236 \text{ kg-m}^2)$

DIMENSIONS FOR CONTOURED IMPACT SURFACE

LETTER	INCHES	MILLIMETERS
A	54.0	1372
B	15.8	401
C	30.0	762
D	5.25	133
E	3.75	95
F	24.75	629
G	18.0	457
H	39.0	991
J	78.0	1981
K	30.0	762

S.E.A., Inc. VIMF

Vehicle Inertia Measurement Facility

Test Date 04-01-2003
Date Printed 04-01-2003

Year 2003
Make MGA
Model FMVSS 301

Project # MGA
VIN

VIMF Test # 1750
Track Width 1527.8
Roof Height 789.6
Wheel Base 3044.2

Description Bus cart, Tire pressure RF 25 psi, LF, RR, LR 24 psi.

Load

Left Front	Right Front	Front Pressure
495.3	496.2	0.0
401.7	401.3	0.0

Lateral CG = 0 mm



Long. CG = 1362 mm

Total Weight
1794.4

Left Rear Right Rear Rear Pressure Tire Description Goodyear Power Steer G76-15

Applied Weights (kg)	Platform Angle (deg)	Motion Relative to Platform (mm)	CG Height (mm)
0.0	0.047	0.000	0.0
157.1	4.062	-0.413	401.3
305.9	7.721	-0.935	401.1
157.1	-3.962	0.454	401.0
305.9	-7.615	0.941	401.9

401.3

SSF = 1.904

Period (sec)	Platform Amplitude (deg)	Relative Motion (mm)	Pitch Inertia (kg-m ²)
4.978	3.987	0.316	4540
4.978	4.113	0.330	4540
4.978	4.039	0.323	4540
			4540

Period (sec)	Platform Amplitude (deg)	Relative Motion (mm)	Yaw Inertia (kg-m ²)	Roll/Yaw Product (kg-m ²)
3.265	3.119	0.225	4859	-7
3.268	3.013	0.217	4855	-6
3.265	3.131	0.220	4864	-7
			4859	-7

Period (sec)	Platform Amplitude (deg)	Relative Motion (mm)	Roll Inertia (kg-m ²)
1.103	2.786	1.053	383
1.105	2.724	1.184	383
1.105	2.649	1.171	382
			383